Fig. 2-2 **TRAFFIC VOLUMES AND ACCIDENTS**

Roadway Characteristics

General Design & Maintenance

In serving multiple functions, the Canal Road Corridor has been designed, constructed, and maintained in part as a major multi-lane thoroughfare and in part as a two-lane reversible-lane roadway serving heavy commuter traffic. The roadway ranges in width from two to six lanes, with the outside lanes of the six-lane M Street section serving as parking lanes through most of Georgetown. Along Canal Road west of Key Bridge, the roadway is a four-lane facility between Key Bridge and Foxhall Road. From there westward, the roadway is a tree-lined, two-lane thoroughfare through parkland and an area predominantly rural in appearance to its intersection with Arizona Avenue. The roadway in that section is characterized as a parkway with low curbs and no shoulders or adjacent sidewalks. Between Arizona Avenue and Chain Bridge, the roadway is a three-lane facility that uses the middle lane as a peak-hour reversible lane for commuter traffic. From Chain Bridge to the Maryland state line, the two-lane roadway is part of the Clara Barton Parkway and is used as a reversible roadway for peak-hour commuter traffic as well.

The Georgetown portion of the Corridor on M Street is characterized as a busy urban roadway with parking lanes, metered parking, bus stops, traffic signals and signs, crosswalks, various traffic and turning restrictions, curbs, gutters, and stormwater facilities. Street lighting is provided along the entire length of the Corridor except for the 2,700 feet portion of Canal Road between Chain Bridge and the Maryland State line.

Speeds limits, where posted, are set at 35 miles per hour along Canal Road. Speed limits are not posted on M Street in Georgetown. Actual travel and maximum speeds will vary, sometimes substantially, according to traffic conditions and hours of the day. Vehicles traveling at speeds of 50 miles per hour or more have been noted on the Canal Road portion of the corridor.

The alignment of Canal Road is curvilinear, following generally the gently winding Potomac River. The portion of M Street through Georgetown, however, is straight for its 0.6-mile length and is part of the grid pattern of streets that are typical of the historic community. Overall, the roadway through the corridor relatively flat; a result primarily of following the gradual descent of the Potomac River as it enters the District of Columbia. This lack of vertical grades is a mixed blessing. The roadway is a safer facility for driving because of the good sight lines; however, it offers little in the way of scenic views.

Present roadway surface conditions range from good to very poor over the length of the Corridor. Portions of very poor roadway surface are found along the M Street portion of the Corridor. In the past year or so, Georgetown has been experiencing numerous problems with disruption of electrical service due to faulty underground cables along M Street and other streets in the area. This has necessitated numerous excavations of underground utilities along M Street with the resultant patchwork of construction activities, including temporarily patched pavement and steel plates on the roadway surface. Pepco, the electrical utility company, has initiated a major program for reconstruction of buried cables that will last until early 2004. This reconstruction program will be conducted in a series of phases to minimize disruption to the residences and businesses in Georgetown.

Canal Road has generally good pavement conditions, although there are numerous rough sections in need of resurfacing. Several pull-off areas along the route that were used during recent reconstruction of the retaining wall on the river side of the roadway are in poor condition and consist of barren and muddy surfaces.

The District Department of Transportation (DDOT) maintains Canal Road and M Street. Maintenance includes street

Steel Plates in Georgetown

Confusing traffic flow near the Key Bridge

Parking

There are no designated on-street parking locations on Canal Road for its entire length. As a two-lane arterial and commuter roadway nearly its entire length from the Maryland state line to Key Bridge, the roadway borders virtually all undeveloped parkland. There are no residential or commercial areas along the road that would require on-street parking. Because of the narrow cross-section of the roadway, there are no shoulders or parking lanes available even if on-street metered parking were desired. M Street, on the other had, includes metered parking along much of its length.

However, in almost all portions of the roadway length restrictions on parking are in effect during peak commuter hours in order to provide additional travel lanes. Peak hours are usually designated as 7:00-9:30 a.m. and 4:00-6:30 p.m.

Off-street paid parking is also available in Georgetown at several of the larger commercial buildings near M Street and Wisconsin Avenue or at a few scattered parking lots. Parking on residential side streets, while possible, is difficult because of the high demand throughout the day and evening and due to the time restrictions placed on vehicles of non-residents.

sweeping, repairs, resurfacing, lane stripping, and curb and gutter maintenance. Snow removal and maintenance of storm drains are also performed by DDOT. Lighting and traffic signals are maintained by outside contractors. Various utility companies will also perform periodic maintenance or construction activities along the Corridor as needed. The National Park Service (NPS) maintains adjacent NPS property and roadways, such as the entrance to Fletcher's Boat House and the Abner Cloud House on Canal Road, and the portion of Canal Road designated as the Clara Barton Parkway west of Chain Bridge.

Traffic Volumes

Traffic volumes along Canal Road and M Street are typical of major urban arteries in the District of Columbia. Traffic volumes through Georgetown (28th Street to Key Bridge) are typically 28,000 Average Annual Weekday Vehicles (vehicles per day in both directions, or VPD). Along Canal Road from Key Bridge to Foxhall Road, volumes are 40,000 VPD because of substantial traffic accessing or mixing in that section bound to and from Key Bridge. On the section of Canal Road between Foxhall Road and Arizona Avenue, traffic volumes typically are 20,000 VPD. High volumes occur on the section of Canal Road between Arizona Avenue and Chain Bridge again as a result of mixing traffic on Canal Road with traffic using that section for traveling between Arizona Avenue and Chain Bridge. That section of roadway, with its reversible peak-hour lane, is an important access route between Northern Virginia suburbs and the northwest and northern portions of the District. Traffic on Canal Road west of Chain Bridge is typically 20,000 VPD. (See Figure 2-2, Canal Road Traffic Volumes and Accidents)

Traffic Congestion

Traffic congestion and delays in the Washington, DC region are experienced on nearly every major arterial roadway and highway. The Canal Road scenic corridor is no exception. Nearly the entire length of the scenic byway experiences consistent peak-hour traffic volumes and congestion resulting in delays in the morning and evening commuter periods. These delays can become substantial when an accident or other emergency incident occurs. Particular locations experiencing severe congestion include the intersections of Canal Road with Chain Bridge, Arizona Avenue, Foxhall Road and Key Bridge. M Street also experiences substantial congestion during peak hours but mainly during the afternoon rush hour. Delays at signalized intersections are common as are delays due to vehicles making left turns on to side streets. Westbound delays can also occur near Key Bridge.

M Street also has the unique characteristic of experiencing substantial congestion during many weekend evening and late nights as a result of heavy traffic associated with people patronizing local restaurants, nightclubs and other entertainment establishments. Parking during these late-night periods is also a problem with many cars circling blocks or otherwise delaying traffic as they seek on-street parking.

These conditions of congestion have prevailed for years and are expected to continue into the foreseeable future. Little in the way of additional capacity can be incorporated into the Canal Road corridor due to the constraints of the parkland and C&O Canal bordering Canal Road and the historic narrow urban corridor that characterizes M Street through Georgetown. During the off-peak periods and on weekends, except as noted above, the corridor functions at acceptable levels of service over much of its length.

Traffic Control

Because Canal Road is a heavily traveled route intersecting several other major avenues and streets within the District, traffic control at many intersections is provided by traffic signals. Every intersection with a major roadway is signalized. This includes the intersections of Canal Road with Chain Bridge, Arizona Avenue, Foxhall Road, Whitehurst Freeway, and Key Bridge. From Key Bridge eastward, signalized intersections are found at the intersection of M Street with:

· Key Bridge, · 34th Street, · 33rd Street, · Potomac Street
· Wisconsin Avenue, · 31st Street, · 30th Street, · 29th Street

Several of the signalized intersections include left turn lanes or arrows that help traffic flow, especially during peak hours. There are few prohibited left turns along the corridor, the most notable being the prohibited left turn (except for trucks) from eastbound M Street to northbound Wisconsin Avenue and a prohibited left turn from Chain Bridge onto Canal Road (Clara Barton Parkway).

Reversible lanes are used to accommodate both morning and evening peak hour commuter traffic flows along Canal Road between Foxhall Road and the Maryland state line. From Foxhall Road to Arizona Avenue this consists of using the two-lane roadway as a one-way facility in-bound in the morning between 6:00 a.m. and 10:15 a.m. and as a one-way out-bound roadway between 2:45 p.m. and 7:15 p.m., Monday through Friday. Similar restrictions apply in the section of Canal Road from Chain Bridge to the Maryland state line. On the three-lane section of Canal Road between Arizona Avenue and Chain Bridge, the middle lane is used as a reversible lane serving the PM peak hour outbound direction between 2:45 p.m. and 7:15 p.m. At all other times of the day this middle lane serves inbound traffic.

General Review of Roadway Safety

There are no sections with substantial substandard designs or roadway conditions along the Canal Road scenic corridor that result in unsafe operating conditions. Likewise, the roadway is maintained at a level that adequately protects user safety. As with any urban roadway, vehicular accidents do occur along the byway route and an analysis of these accident locations can indicate which roadway sections are less safe than other sections.

Accident data collected and reported by the District Department of Transportation has been used to identify those areas and locations with the greatest number of accidents. Examination of data collected over the three-year period of 1997 through 1999 shows that accidents occur at locations along the entire length of the Byway as shown in Figure 2-2. The most notable accident locations during this time period, as reported to the DDOT, include (number of accidents are in parentheses):

- M Street and Wisconsin Avenue (102 accidents)
- M Street and 33rd Street (30)
- M Street and 30th Street (26)
- Canal Road and Arizona Avenue (19)
- M Street and Key Bridge (13)
- Canal Road and Foxhall Road (12)
- Canal Road and Reservoir Road (10)

These accident totals are not considered unduly high given the traffic volumes and congestion that the corridor experiences. In comparison, other high accident locations in the District of Columbia include New York Avenue and Bladensburg Road, NE (168 accidents), New York Avenue and 1st Street, NW (114 accidents), and Pennsylvania Avenue and Minnesota Avenue, SE (111 accidents).

Reversible lanes during peak hours

Confusing Intersection and Access at Abner Cloud/Fletchers Boathouse.